



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,459	09/26/2006	Yasufumi Takahashi	MAM-079	9477
20374	7590	08/13/2008		
KUBOVCIK & KUBOVCIK SUITE 1105 1215 SOUTH CLARK STREET ARLINGTON, VA 22202			EXAMINER WEINER, LAURA S	
			ART UNIT	PAPER NUMBER
			1795	
			MAIL DATE	DELIVERY MODE
			08/13/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/594,459

Applicant(s)

TAKAHASHI ET AL.

Examiner

/Laura S. Weiner/

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2008 and 29 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 4-17-08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 7-26-08 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 11/288,355 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

2. Applicant's arguments with respect to claims 1-2, 5-9, 15-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. Claims 1- 2, 5-9, 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitao et al. (EP 1 391 959 or CN 1484336A or 7,198,871).

Kitao et al. ('959) teaches on page 2, a battery comprising a negative electrode, an electrolyte and a positive electrode comprising a mixture of a lithium-manganese composite oxide and at least one of lithium- nickel composite oxide, $\text{LiNi}_a\text{M}_{11-a}\text{O}_2$ where M1 can be at least one of Mn, Co, etc. and lithium-cobalt oxide, $\text{LiCo}_b\text{M}_{21-b}\text{O}_2$ where M2 can be at least on of Mg, Zr, Al, Ti, etc. Kitao et al. teaches on page 3, that the lithium nickel composite oxide can be $\text{LiNi}_c\text{MndCo}_1\text{-dO}_2$.

Kitao et al. teaches the claimed positive electrode but does not specifically teach that the lithium cobalt oxide comprises Mg, Zr and/not Al or Ti but teaches that these can be present for M2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Mg, Zr and/not Al or Ti, in the lithium cobalt oxide taught by Kitao et al. because it is prima facie obvious to combine compositions/compounds each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. See *In re Kerkhoven*, 205 USPQ 1069; *In re Susi*, 169 USPQ 423.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitao et al. (EP 1 391 959 or CN 1484336A or 7,198,871) in view of Takahashi et al. (US 2004/0229123).

Kitao et al. teaches the claimed invention as explained above but does not specifically teach that the Zr compound contained in the lithium metal oxide exists in the form of particles adhered onto the surface of the lithium metal complex oxide.

Takahashi et al. teaches on page 24, a battery comprising a negative electrode comprising a carbon material and a positive electrode. Takahashi et al. teaches on page 17, example 4-2, a positive electrode comprising Li:Co:Zr:Mg:Al =1.0:0.9796:0.0004:0.01:0.01. Takahashi et al. teaches on page 7, [0127-0135], that the positive electrode material contains zirconium on the surface of the lithium transition metal composite oxide because it improves the cycle characteristics and the high rate characteristics, leaving room for improvement of the thermal stability and the power characteristics at high charging potentials. The uniform existence of magnesium in addition to zirconium improves the thermal stability at high charging potentials without

deteriorating excellent cycle characteristics and high rate characteristics at high charging potentials.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lithium transition metal composite oxide taught by Takahashi et al. instead of the lithium cobalt oxide taught by Kitao et al. because Takahashi et al. teaches that the positive electrode material contains zirconium on the surface of the lithium transition metal composite oxide because it improves the cycle characteristics and the high rate characteristics, leaving room for improvement of the thermal stability and the power characteristics at high charging potentials. The uniform existence of magnesium in addition to zirconium improves the thermal stability at high charging potentials without deteriorating excellent cycle characteristics and high rate characteristics at high charging potentials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Laura S. Weiner/ whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura S Weiner/
Primary Examiner
Art Unit 1795

August 10, 2008